

Abstract of the Disclosure

A coating method using a plasma excitation chemical vapor deposition (CVD) device includes steps of placing a metal plate in a vacuum chamber of the CVD device, discharging air inside the vacuum chamber, charging a mixture of a gas containing at least osmium and a gas containing a hydrogen gas, adjusting a pressure of the vacuum chamber at predetermined level; and generating plasma inside the vacuum chamber. An electrically conductive amorphous coating having a dense structure is uniformly formed over a surface and an interior of a micro-hole of an aperture plate. Also, it is possible to form an osmium coating having a high purity and a lower impurity content with good repeatability.